

CLAIMS:

1. A method of producing isolated IgG1 subclass antibodies reactive to the surface of *Cryptosporidium* oocysts, the method comprising:
 - (a) pretreating *Cryptosporidium* oocysts with a reagent so as to remove the surface layer of the oocysts to form an oocyst antigen preparation;
 - (b) separating the oocysts from the oocyst antigen preparation so as to obtain a separated oocyst antigen preparation capable of eliciting a detectable IgG1 immune response in an animal to the surface of the oocyst;
 - (c) immunising an animal with the separated oocyst antigen preparation so as to elicit an IgG1 immune response in the animal; and
 - (d) obtaining from the animal IgG1 antibodies reactive to the surface of *Cryptosporidium* oocysts.
2. The method according to claim 1 wherein the reagent is a detergent.
3. The method according to claim 2 wherein the detergent is sodium dodecyl sulphate (SDS).
4. The method according to claim 3 wherein the pretreating is boiling the oocysts in the presence of SDS for a sufficient time to generate the oocyst antigen preparation.
5. The method according to claim 4 wherein (a) is boiling the oocysts for 1 hour in the presence of 0.5% (w/v) SDS.
6. The method according to claim 1 wherein the reagent is selected from the group consisting of urea, detergents including Triton X-100 and nonident, enzymes including chitinase, oxidising agents including sodium hypochlorite, sodium periodate, and ozone; and reducing agents including mercaptol ethanol and 1,1,1-trichloro- 2,2-bis[4-chlorophenyl]ethane.
7. The method according to any one of claims 1 to 6 wherein (c) further includes one or more adjuvants.
8. The method according to any one of claims 1 to 7 wherein the animal is a mouse.
9. A method of producing isolated IgG1 subclass antibodies reactive to the surface of *Cryptosporidium* oocysts, the method comprising:
 - (a) separating at least a portion of the *Cryptosporidium* oocyst wall from the internal sporozoites to form an oocyst-wall preparation;
 - (b) treating the separated oocyst-wall preparation so as to obtain an oocyst antigen preparation capable of eliciting a detectable IgG1 immune response in an animal to the surface of the oocyst;

CLAIMS:

1. A method of producing isolated IgG1 subclass antibodies reactive to the surface of *Cryptosporidium* oocysts, the method comprising:
(a) pretreating *Cryptosporidium* oocysts with a reagent so as to remove the surface layer of the oocysts to form an oocyst antigen preparation;
(b) separating the oocysts from the oocyst antigen preparation so as to obtain a separated oocyst antigen preparation capable of eliciting a detectable IgG1 immune response in an animal to the surface of the oocyst;
(c) immunising an animal with the separated oocyst antigen preparation so as to elicit an IgG1 immune response in the animal; and
(d) obtaining from the animal IgG1 antibodies reactive to the surface of *Cryptosporidium* oocysts.

2. The method according to claim 1 wherein the reagent is a detergent.

3. The method according to claim 2 wherein the detergent is sodium dodecyl sulphate (SDS).

4. The method according to claim 3 wherein the pretreating ^{comprises} is boiling the oocysts in the presence of SDS for a sufficient time to generate the oocyst antigen preparation.

5. The method according to claim 4 wherein ^{the boiling of} (a) is boiling the oocysts for 1 hour in the presence of 0.5% (w/v) SDS.

6. The method according to claim 1 wherein the reagent is selected from the group consisting of urea, detergents, including Triton X-100 and nonident, enzymes, including chitinase, oxidising agents including sodium hypochlorite, sodium periodate, and ozone; and reducing agents including mercaptol ethanol and 1,1,1-trichloro- 2,2-bis[4-chlorophenyl]ethane.

7. The method according to ^{Claim 1} ~~any one of claims 1 to 6~~ wherein ^{the preparation of step} (c) further includes one or more adjuvants.

8. The method according to ^{Claim 1} ~~any one of claims 1 to 7~~ wherein the animal is a mouse.

9. A method of producing isolated IgG1 subclass antibodies reactive to the surface of *Cryptosporidium* oocysts, the method comprising:

(a) separating at least a portion of the *Cryptosporidium* oocyst wall from the internal sporozoites to form an oocyst-wall preparation;
(b) treating the separated oocyst-wall preparation so as to obtain an oocyst antigen preparation capable of eliciting a detectable IgG1 immune response in an animal to the surface of the oocyst;

(c) immunising an animal with the oocyst antigen preparation so as to elicit an IgG1 immune response in the animal; and

(d) obtaining from the animal IgG1 antibodies reactive to the surface of *Cryptosporidium* oocysts.

5 10. The method according to claim 9 wherein the separation of the oocyst wall from the internal sporozoites ^{comprises inducing} is by causing the oocyst to excyst followed by immuno-separation of the oocyst wall components.

11. The method according to claim 9 wherein the separation of the oocyst wall from the internal sporozoite ^{comprises inducing} is by causing the oocyst to excyst followed by separation of the wall components by the group consisting of centrifugation, ^{means selected from} flow cytometry, density gradient separation, precipitation, immuno-labelling, ligand-binding, biotin-labelling ^{with} and separation by avidin, and chromatographic separation.

12. The method according to claim 10 ^{comprises} or 11 ^{inducing} wherein causing the oocyst to excyst ^{is by} freeze-thawing or ^{the oocyst} by physically breaking up by crushing, sonication, or grinding.

13. The method according to ^{claim 9} ~~any one of claims 9 to 12~~ wherein the treating step (b) ^{comprises} is by physically breaking up the cell wall.

14. The method according to ^{claim 9} ~~any one of claims 9 to 13~~ wherein (c) further includes one or more adjuvants. ^{the preparation of step}

15. The method according to ^{claim 9} ~~any one of claims 9 to 15~~ wherein the animal is a mouse.

16. An isolated IgG1 antibody reactive to the surface of *Cryptosporidium* oocysts produced by the method according to ^{claim 1} ~~any one of claims 1 to 8~~.

17. The antibody according to claim 16 ^{wherein the antibody is} being a monoclonal antibody.

18. An isolated IgG1 antibody reactive to the surface of *Cryptosporidium* oocysts produced by the method according to ^{claim 9} ~~any one of claims 9 to 15~~.

19. The antibody according to claim 18 ^{wherein the antibody is} being a monoclonal antibody.

20. An isolated IgG1 antibody reactive to the surface of *Cryptosporidium* oocysts, ^{wherein} the antibody ^{has} the oocyst binding and affinity characteristics of antibody CRY104.

21. The antibody according to claim 20 ^{wherein} being a monoclonal antibody.

22. The antibody according to claim 21 ^{is} being the IgG1 monoclonal antibody produced by clone CRY104. ^{hybridoma}

23. The hybridoma clone CRY104.

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